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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/027,226

12/20/2001

Ranjani V. Parthasarathy

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3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

HANDY, DWAYNE K

ART UNIT

PAPER NUMBER

1743

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/027,226

Applicant(s)

PARTHASARATHY ET AL.

Examiner

Dwayne K. Handy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-28,30-55,62-67 and 77-81 is/are pending in the application.
- 4a) Of the above claim(s) 1,3-28 and 30-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 50-55,62-67 and 77-81 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/4/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 50-53 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 53 and 56-58 of copending Application No. 10/417,609 in view of Dusterhoft (6,451,260). This is a provisional obviousness-type double patenting rejection. This rejection remains in effect.

3. Claims 50-53 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 39-42 of copending Application No. 10/027,222 in view of Dusterhoft (6,451,260). This is a

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provisional obviousness-type double patenting rejection. This rejection remains in effect.

4. The Examiner notes Applicant's desire to address these rejections upon an indication of otherwise allowable subject matter (pages 15 and 16 of Arguments submitted 11/21/06). The Examiner also notes that Application No. 10/027,222 has been allowed although the '222 Application has not been issued as a patent.

Inventorship

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
7. Claims 50-52, 64, 65 and 77-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson et al. (6,344,326) in view of Dusterhoft et al. (6,451,260). This rejection was previously applied to claims 5052, 64, 65, 77 and 78. It now includes new claims 79-81.
8. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson and Dusterhoft as applied above, and further in view of Mian et al. (6,319,469).
9. Claims 54, 55, 66 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson and Dusterhoft as applied above, and further in view of Chisolm et al. (4,399,009).
10. Claims 62 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson and Dusterhoft as applied above, and further in view of Kellogg (6,632,399).

These rejections were made in the previous Office Action (mailed 8/24/06) and remain in effect. Please see Response to Arguments below.

Response to Arguments

11. Applicant's arguments filed 11/21/2006 have been fully considered but they are not persuasive. Applicant has amended claims 1, 20, 26, 28, 47, 50 and 78 to include the limitation of "wherein the solid hydrophilic particles comprise molecules different than the hydrophobic matrix". Applicant has then argued that this feature is not taught by Dusterhoft (page 17 lines 1-7 of Arguments). Applicant appears to be arguing that the amended claims now require that the matrix and embedded particles be completely different, separated compounds that would exclude the resin material of Dusterhoft. This argument is beyond the scope of the claim. The Examiner directs Applicant to the passages from columns 15 and 16 of Dusterhoft that directly precede the passages cited in the previous Office Action (pages 5 and 6, mailed 8/24/06):

(70) In certain instances, the resin preferably comprises both hydrophilic and hydrophobic segments within its molecules. Suitable resins include poly(vinyl alcohol-co-ethylene), poly(vinyl alcohol-co-vinylacetate), ethylene acrylic acid copolymer, ethylene acrylic ester copolymer, ethylene acrylamide copolymer, acrylic acid vinylacetate copolymer, acrylamide vinylacetate copolymer, copolymer of acrylic acid diamine monoamide with vinylacetate, poly(vinyl alcohol-co-styrene), acrylamide acrylic ester copolymer, and mixtures thereof. Specifically, copolymers of acrylamide with hexyl acrylate, propyl acrylate or dodecyl acrylate are useful.

(71) Preferably the solvent is selected from dimethyl sulfoxide, dimethylformamide, dimethylacetamide, formamide, formic acid, acetic acid, 2,2,2-trichloro ethanol, and mixtures thereof.

(72) Preferably the nonsolvent is selected from water, alcohols having 1 to 4 carbon atoms, ammonia, ethylacetate, acetone, ethylenediamine, and mixtures thereof. The nonsolvent may be either liquid or gaseous.

(73) The nonsolvent is caused to diffuse into the liquid layer of the resin solution by various methods. A liquid nonsolvent may be brought into contact with the liquid layer of resin solution from one or both sides thereof, for example by dipping the end of the tube at which the layer of resin solution is positioned into a liquid nonsolvent. Additionally or alternatively, the nonsolvent may be introduced from the distant end of the tube. If a gaseous nonsolvent is to be used, the arrangement of support with layer of resin solution is positioned within an atmosphere which is saturated or nearly saturated with the vapors of the nonsolvent. Precipitation may also be

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accomplished in two successive steps by firstly applying gaseous nonsolvent and, after partial solidification, subsequently applying liquid nonsolvent.

(74) Plane upper and lower surfaces of the microporous element are obtained when the final concentration of nonsolvent in the resin solution during precipitation is raised to about 50% by weight. A plane upper surface allows for a more uniform filtration performance of the filter element. A plane lower surface provides even contact with, e.g., blotting membranes onto which an adsorbed material is to be transferred.

(75) Typical combinations of resin/solvent/nonsolvent are, for example, one of poly(vinylalcohol-co-ethylene), nitrocellulose, cellulose propionate, or polyvinylacetate as resin, dimethyl sulfoxide as solvent and water as nonsolvent; or polyamides (like Nylon 6,6) as resin, 2,2,2-trichloro ethanol as solvent and acetone as nonsolvent.

(76) Without intending to be bound to theory it is believed that in generating the microporous element according to the present invention the following mechanisms are involved: When the nonsolvent diffuses into the layer of resin solution, the solubility of the resin is gradually decreased. As the limit of solubility is reached the resin begins to precipitate from the solution at individual points. The precipitation of the resin proceeds at the points of initial precipitation. Ultimately, the solvent/nonsolvent is enclosed in large interconnecting enclaves in a solid matrix of resin. The interconnecting enclaves form the liquid-permeable channels of the final microporous element. If a synthetic resin is used which comprises both hydrophilic and hydrophobic segments, the hydrophobic segments will be forced towards each other and brought into contact with each other as the concentration of nonsolvent in the resin solution increases. There will be interactions between the hydrophobic segments of neighboring molecule chains, which result in the formation of a crystalline hydrophobic backbone of the precipitated resin. The hydrophilic segments will be oriented towards the enclaves filled with solvent/nonsolvent. Accordingly, a microporous element is obtained where the liquid-permeable channels are predominantly hydrophilic. This provides the benefit of biocompatibility. The term "biocompatibility" means that the three-dimensional structure of biopolymers, for example proteins, peptides, nucleic acids, oligonucleotides, polysaccharides or derivatives thereof, is maintained. The interphase forces are less destructive when the polymer surface is rich in hydroxyl, amide or ether groups.

The original passage cited by the Examiner – paragraph 76 - details the formation of the solid hydrophilic segments in the channels surrounded by hydrophobic matrix material.

Applicant's amended claims simply require that the solid hydrophilic particles comprise **molecules** different than the hydrophobic matrix. Paragraph 70 (in bold above) recites the use of copolymers having two different compounds in forming the microporous structure. One of the two compounds present is hydrophobic; the other hydrophilic.

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The copolymer is then used to form the microporous structure described in paragraph

76. The Examiner submits that a copolymer having both hydrophobic and hydrophilic compounds (poly (vinyl alcohol-co-ethylene), for example) comprises solid hydrophilic particles (vinyl alcohol) that are different molecules than the hydrophobic particles (ethylene). Therefore, the teachings of Dusterhoft meet the new limitation and the claims remain rejected.

Conclusion


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwayne K. Handy whose telephone number is (571)-272-1259. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DKH
January 4, 2007


Jill Warden
Supervisory Patent Examiner
Technology Center 1700